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Stakeholder initiatives in flood risk management: exploring the role and impact of bottom-up initiatives in three 'Room for the River' projects in the Netherlands

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In recent years stakeholder participation has become a popular topic in flood management. Little is known about how and under which circumstances local stakeholders initiate and develop successful flood management strategies and how governmental actors respond to them. Drawing on theories of social movements, stakeholder participation, and citizenship, this paper analyses how local stakeholder initiatives in the Dutch 'Room for the River' programme evolve and, in turn, influence such governmental plans and actions. The description and comparative analysis of the three cases leads to three conclusions: first, in all cases, forms of local self-organization play a role, but its impacts are highly dependent on the mix of strategies chosen. Second, forms of coproduction between local stakeholders and government actors are the most viable strategy to realize the positive impact of local initiatives. Third, government agencies tend to react to local initiatives defensively. Much depends on timing and connecting to the right people.

Keywords: flood management; stakeholders; impact; citizen initiatives; governance

1. Introduction

The threat of climate change and its impacts on a lowland country like the Netherlands have put flood risk management upfront on the political agenda. New strategies, policies and interventions to increase flood-preparedness require sometimes radical interventions in the life-worlds of citizens (Marshall, Blackstock, and Dunglinson 2010; Nye, Tapsell, and Twigger-Ross 2011; Roth and Winnubst 2009; Van Buuren, Edelenbos, and Warner 2012; Hartmann and Spit 2015). To deal with these challenges, Dutch water management has gradually shifted from exclusively top-down interventions towards, often hesitant and inconsistent, experimentations with more inclusive and participatory approaches. In other countries, stakeholder engagement and participation have also become increasingly important in flood risk management (Chess and Purcell 1999; Koontz 2005; Thaler and Levin-Keitel 2015; House 1999; Leach and Pelkey 2001; Leach 2006; Rinaudo and Garin 2005; Petts and Brooks 2006; Scholz and Stiffel 2005; Sabatier *et al.* 2005; Abbas *et al.* 2014), By involving citizens, NGOs and societal groups, public decision-makers hope to enhance support for their decisions, and thus to accelerate decision-making processes. Moreover, participation can enhance both the quality and democratic legitimacy of policy processes and decisions (Michels 2011; Lupo Stanghellini and Collentine 2008).

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However, experiments with stakeholder engagement often do not immediately yield the results initially hoped for, due to various barriers (Tseng and Penning-Rowsell 2012). In general, flood risk management is a strongly expert-dominated policy domain. Within the world of civil engineers, stakeholder engagement is often seen as a threat to decisive and uncompromised action, which is deemed necessary to prepare for serious crises (Warner 2006). It is sometimes even seen "to contribute to the problem rather than to add in the solution" (Pearce 2003, 218).

Although there is literature focusing on pressure group, or interest group, strategies (e.g. Kollman 1998; Binderkrantz 2005), the literature on flood risk management and climate adaptation does not pay much attention to bottom-up stakeholder initiatives that evolve in the shadow of formal decision-making processes, especially with regard to the impact of these initiatives on flood risk management strategies. Most attention is paid to forms of stakeholder engagement organized by the government, which sets the conditions (rules, roles, phase, instruments, etc.) under which such engagement can take place. Recently, however, Thaler and Levin-Keitel (2015) have described upcoming bottom-up initiatives in the context of a high level of self-responsibility in flood risk management in England. Controversial proposals from the government may meet with fierce resistance by local stakeholders and provoke the latter to develop bottom-up strategies to defend their values and interests (Nye, Tapsell, and Twigger-Ross 2011). In the Netherlands, we also see such self-initiated stakeholder engagement (Van Buuren, Edelenbos and Klijn 2010). However, we still know little about forms of stakeholder engagement that are not initiated and controlled by the government. Moreover, we know little about how, and under which circumstances, local stakeholders manage to develop, how governmental actors respond to them and to what extent these new forms of engagement have effect and impact.

In this paper, we analyse the issue of local stakeholder engagement in the context of the Dutch 'Room for the River' programme (Warner, Van Buuren, and Edelenbos 2012), which aims at reducing flood risk by enlarging the water discharge capacity of the main Dutch rivers, while enhancing 'spatial quality' (Room for the River 2012). Using three cases of Room for the River interventions (see below), we analyse how local stakeholder initiatives evolve (in reaction to planned government interventions) and, in turn, importantly influence such governmental plans and actions.

The following research question guides this paper: *How did stakeholder engagement develop in flood risk management projects in the Netherlands, what kind of responses from governmental actors did this evoke, and what does this imply in terms of the conditions under which stakeholder engagement can have impact in flood risk management*? This question is answered by analysing and comparing three cases of regional flood risk management in the Netherlands, all based on qualitative research. In Section 2, we elaborate our analytical framework and its core elements, and address the methodological aspects regarding our research. In Section 3, we provide background information on our cases. In Section 4, we analyse the cases regarding our core variables. We end our paper with four more generic conclusions.

2. Theoretical framework and methodology

2.1. The rise of stakeholder engagement

Within a more general trend towards new forms of democratic governance we see all kinds of initiatives to encourage the engagement of stakeholders (citizens, NGOs, etc.) in decision-making by means of community(-based) or participatory planning and interactive decision-making (Healey 1997, 2007; Leach and Pelkey 2001; Lowndes,

Pratchett, and Stoker 2001; Edelenbos 2005; Nye, Tapsell, and Twigger-Ross 2011; Edelenbos, Klok, and Tatenhove 2009; Edelenbos, Klijn, and Steijn 2010; Abbas *et al.* 2014). This tendency to underline the importance of stakeholder engagement in decision-making processes is also visible in current approaches to climate change adaptation (Maciejewski Scheer and Höppner 2010; Pahl-Wostl 2006, 2007; Few, Brown, and Tompkins 2007), adaptive or collaborative water management (Meijerink and Huitema 2010; Van Buuren 2013) and integrated flood risk management (Green 2002; Marshall, Blackstock, and Dunglinson 2010; Lupo Stanghellini 2010; Thaler and Priest 2014; Thaler and Levin-Keitel 2015).

Stakeholder engagement, as we use the term in this paper, means that any group or individual who can affect, or is affected by, programmes, plans and projects is involved in the decision-making process (Freeman 1984; Lupo Stanghellini 2010). In this view, stakeholder engagement is a more focused approach than public participation, as it underlines the deeper, more personalized stakes at hand in decision-making (Beierle 2002; Lupo Stanghellini 2010). Contrary to participation, moreover, it also includes those cases in which the initiative does not originate from the government but from citizens and other stakeholders themselves.

Important motives to involve stakeholders in decision-making in the field of flood risk management are (1) gaining increased support by societal actors, (2) improvement of the quality of decision-making by using their information and solutions, and (3) creating democratic legitimacy and trust by bridging the perceived growing cleavage between citizens and flood risk management agencies (cf. Leach and Pelkey 2001; Macpherson 1977; Sørensen and Torfing 2007; Green 2002; Thaler and Levin-Keitel 2015).

However, there are also concerns with stakeholder engagement in flood risk management. Several authors mention barriers which make the above-mentioned motives for involving stakeholders in decision-making in the field of flood risk management hard to reach (e.g. Chess and Purcell 1999). Tseng and Penning-Rowsell (2012) mention not only different types of barriers related to governmental institutions (lack of institutional support, accountability problems and closed cultures), but also barriers regarding time, power inequalities and stakeholder characteristics. Stakeholders also can experience frustration when their input is not taken seriously and does not have effect and impact (Monnikhof and Edelenbos 2001).

2.2. *Stakeholder engagement: government- or stakeholder-induced?*

In the literature there is increasing attention to stakeholder initiative, self-organization and local self-responsibility of community groups (Thaler and Priest 2014; Thaler and Levin-Keitel 2015). Room for stakeholder engagement may considerably reduce the government's abilities to directly control the governing process (Sørensen 2002, 99). However, even then the government is indirectly ruling, as stakeholder engagement may be highly steered and conditioned by public agencies (Abbas *et al.* 2014). They set the basic objectives, and the rules (how to act; how to allocate burdens and benefits) and structures (at what moments in policy-making) for citizen input. The right and opportunity to be involved is not given; it must be continuously negotiated by contesting existing forms of in- and exclusion based on political-administrative choices (Sørensen 2002, 704).

However, rather than fully operating within the restrictions of government-organized participatory processes, citizens often organize themselves locally and take the initiative for collective action (Thaler and Levin-Keitel 2015). In such self-organized forms of stakeholder engagement, citizens, community groups, and social

interest groups spontaneously engage in forms of collective action more independently from, even if in reaction to, government-induced steering processes, structures or decisions, plans and projects (Van Meerkerk *et al.* 2013). Local stakeholder engagement often arises reactively, from dissatisfaction with the actions of governments, and functions as a response to proposed government policies. Such forms of engagement crucially go beyond plan resistance by focusing on the development of alternative plans and projects. This is what is called stakeholder initiative in this paper. To avoid being blamed as NIMBY (Not In My Back-Yard), citizens often develop alternatives for formal policy proposals. Regarding flood risk management, this can imply that residents had to leave their land, houses and property; instead of resisting this, citizens come up with ideas of their own, for example, to heighten their properties (creating terps).

There is, thus, an important difference between public participation and government-initiated forms of stakeholder engagement on one hand, and stakeholder initiatives on the other. The former is controlled by the formal policy initiator and structured by rules set by this initiator. It is restricted as far as the initiator deems necessary. The initiator also defines the scope, moments and methods of participation. The latter, stakeholder initiatives, springs from the self-organizing network of citizens and community groups who aim to develop their own alternatives, plans and projects.

2.3. *Analytical framework and research methodology*

In this research, we are interested in describing and explaining the developments of stakeholder initiatives in flood risk management projects in the Netherlands, and the responses these initiatives evoke from governmental actors. On the basis of literature about stakeholder involvement in water management and flood risk management, we expect that the goals, resources and strategies stakeholders employ and the way governmental actors respond explain the role and impact of stakeholder initiatives and plans on decision-making regarding flood risk management. If the goal or strategy of stakeholders is to fight governmental plans for flood risk management, the response by governmental actors is supposed to be negative to stakeholder initiatives and results in lower impacts. If stakeholders have the resources (time, knowledge, expertise, etc.) to develop their plans and initiatives, governmental actors are supposed to be more inclined to positively respond to stakeholder initiatives. This will, in the end, increase the possibility of policy impact.

These expectations and considerations lead to the following variables that form the core of our analytical framework for this exploratory comparative case study:

(1) *Goals* of local groups: the ambitions of the local groups and the values they want to protect with their initiative;
(2) *Resources* of the local groups: which resources do they mobilize and apply? Resources can be (internal and external) networks, time, money, experience, knowledge and expertise, professional tools (ICT, press releases), norms and values, and material resources like land and other property.

Table 1. Overview of interviews conducted in research period.

Case	Terps plan in Overdiep Polder	Dyke relocation in Lent	Bypass IJsseldelta-South
Interviews	27	25	15
Period included	2007–2012	2007–2011	2008–2011

(3) Local stakeholder *strategies*: which strategy or strategies do they apply? These strategies can vary between – for example – reactive (blocking, litigation) or proactive resistance (by developing and selling own ideas).
(4) Governmental *response*: how do government actors respond to stakeholder strategies? To what extent did the government include the local group in the planning process, leading to processes of co-creation, co-production and collaboration?
(5) *Impact*: To what extent did the stakeholder initiative influence the course of events (process) and the content (scope, alternatives analysed, etc.) of the planning process (Edelenbos, Klok, and Tatenhove 2009; Klijn, Edelenbos, and Steijn 2010)? To what degree are the results from the interactive process translated into (new) policy (Knott and Wildavsky 1980; Koontz 2005; Monnikhof and Edelenbos 2001).

We conducted a qualitative comparative case study research to explain the role and impact of stakeholder initiatives in flood risk management. This research strategy explicitly focuses on comparing cases to find contextual and situational similarities and differences that can be used for explaining the variance in the dependent variable: the impact of a stakeholder initiative on governmental policy (i.e. impact). We used a combination of an instrumental and conventional comparative case study method (cf. Stake 1998; Yin 1984). We used an instrumental case study approach as we want to find out more about a particular phenomenon, stakeholder initiatives. We explicitly use a conventional case study strategy as our ambition is to gain insights from this case comparison, which, in turn, may result in further theoretical reflection on stakeholder initiatives in flood risk management.

We conducted the comparative case study research in a focused way structured by the five variables mentioned and operationalized above, to empirically analyse and explain a particular theoretically relevant issue (role and impact of stakeholder initiatives in flood risk management) and generate new insights. This type of research does not (and cannot) yield generalizable knowledge about local stakeholder initiatives, but it does provide a detailed and contextualized understanding of how local stakeholders employ their involvement and strategies in flood risk management projects and how governmental actors respond to these strategies.

We have deliberately selected three cases for this qualitative comparative case study research: (1) dyke relocation in Lent, (2) bypass construction in IJsseldelta-South, and (3) a ‘terps’ (mounds) plan in the Overdiep Polder. These three cases have some core similarities that make case comparison feasible. All cases deal with realizing measures to improve safety from river floods caused by anticipated climate change in the Netherlands. Moreover, all three cases deal explicitly with stakeholder initiatives, in which citizens and societal organizations jointly developed their own plans next to governmental plans for flood risk management.

Two case studies (Lent and IJsseldelta-South) were part of a larger study of adaptive water management in the Netherlands, in which citizen engagement was central (Van Buuren, Edelenbos, and Klijn 2010). The third case study, the Overdiep Polder, is based upon an analysis of primary documents and interviews by two of the current authors (see also Winnubst 2011; Roth and Winnubst 2009, 2010, 2014).

The cases also show contextual differences regarding the strategy, resources, and goals of initiators and governmental responses to stakeholder initiatives. Moreover, the cases differ in the dependent impact, the impact of stakeholders on decision-making regarding flood risk management. These differences were not fleshed out beforehand, but

were analysed in more detail during the case comparative research. It is important for comparative case study research that cases have enough differences, in order to gain explanatory power in the comparative analysis.

In all cases, in-depth, semi-structured and open-ended interviews were held. In all cases we interviewed various stakeholders, such as representatives of the Room for the River programme, farmers, citizen organizations, municipalities, province representatives, national departments, and nature conservation organizations (see overview in table 1). Some people (for example chair of local interest group, project manager from municipality) were interviewed several times because of their pivotal role in the projects. All interviews were elaborated in transcripts. The transcripts were coded, in which the operationalized core variables were used as main codes. First, the data were analysed per case. The researchers discussed the data per case in different rounds to gain common understanding about the core variables in the study. Second, the data were compared between the three cases. Again, all researchers discussed the similarities and differences between the cases in different rounds of discussion in order to reach common ground.

3. Case descriptions and analyses

In this section, we first provide background information on the three cases (paragraph 3.1). Second, we analyse the three cases on the variables distinguished and elaborated in the theoretical framework (paragraph 3.2).

3.1. Introduction of the three cases

Despite the general 'poldering tradition' in the Netherlands, Dutch water management for a long time has been characterized by centralization and top down interference by the central agency Rijkswaterstaat (Van Buuren, Edelenbos, and Klijn 2010). However, more recently, in the Dutch water management and flood risk management sector there has been a cautious transition from quite top-down and expert-led decision-making to network coordination and stakeholder approaches. This is, for a large part, caused by the professionalization of interest groups and the emancipation and activation of citizens. In this transition not only stakeholder participation took a flight, but rather recently we also witnessed new ways of stakeholder engagement, i.e. stakeholder initiatives or self-organization (Van Buuren, Klijn, and Edelenbos 2012). This is the changing Dutch context of flood risk management in which the three studied cases took place. The first case, the *terps plan in the Overdiep Polder*, is about enlarging discharge capacity in the River Bergsche Maas. The Overdiep polder (550 ha) is hemmed in between the Oude Maasje and the Bergsche Maas (see Figure 1). Confronted with government plans for using the polder for flood storage, the inhabitants of the polder (around 19 households, almost all dairy farmers) developed their own proposal, in cooperation with a water expert. To avoid a long, uncertain planning process the farmers decided to take the initiative. In their proposal for the polder, the idea was developed to make the polder suitable for flood storage (once in 25 years on average), in a way that would meet the Room for the River goals and requirements of lowering of the water level and enhancement of spatial quality. To make this possible, the dyke along the river Bergsche Maas was to be lowered to let the water in when needed. To make the area keep its agricultural functions, mounds (or 'terps') were to be constructed and part of the farms and related property were to be rebuilt on them. The farmers did not approve alternatives such as a dyke bisecting the polder and transformation of the polder into a nature area.

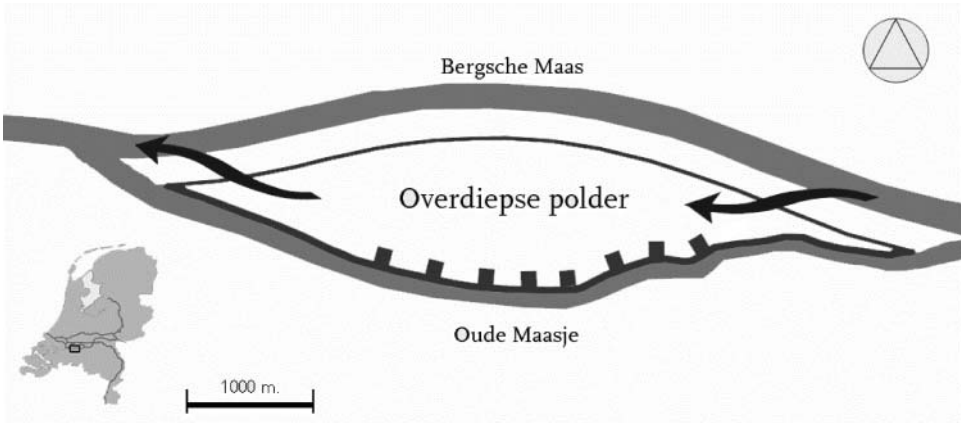

Figure 1. Terps plan in Overdiep Polder, the Netherlands.

The first alternative did not meet the requirements for lowering the water in the river Meuse (and therefore was not acceptable to the government either), while the latter alternative could not be combined with the agricultural function of the polder (see Roth and Winnubst 2014). The total number of farming households in the polder had to be reduced from 17 to around 8, ideally by voluntary sales resulting from farmers' decisions to leave the polder. An additional objective was strengthening the agricultural enterprises remaining in the polder.

Technically the plans for the polder were not very complex, mainly requiring adaptation of the existing infrastructure (dykes, roads) to make water storage possible. What complicated the plans is the decision, based on the inhabitants' initiatives, to combine the polder's 'blue' functions with pre-existing uses and functions of the polder, which basically required a serious and ongoing process of negotiation with the inhabitants about key issues like landownership, compensation, and reallocation of land (see Roth and Winnubst 2010, 2014).

The second case is the *dyke relocation in Lent* (see Figure 2). Lent was considered a bottleneck in the river system, as the River Waal between the city of Nijmegen and Lent is very narrow. The municipality of Nijmegen was surprised by the plan for a dyke relocation initiated by the national government (Department of Infrastructure and Water Management), because the city had already been given approval by the national government (Ministry of Housing) for a housing project in exactly the same area. In 2002, Nijmegen and the national government signed agreements for a contribution to the costs of a second bridge across the River Waal and compensation for redeveloping the local government's plan for housing. These agreements were based on a preference for the plan for a dyke relocation (350 meters inland into the village of Lent). For the proposed dyke relocation fifty houses had to be demolished, which caused much local resistance. The citizens' alternative, aiming at a dyke relocation in the future, was not approved for cost and efficiency reasons.

The third case, the *Bypass IJsseldelta South*, is located in the area between the city of Kampen, the River IJssel en the Drontermeer (Dronten lake) in the Province of Overijssel (see Figure 3). The goal of this project is the improvement of water safety, spatial quality, and infrastructure. Moreover, the project should strengthen the agricultural sector. Thus, it is also a regional development project. The Department of Infrastructure and Water

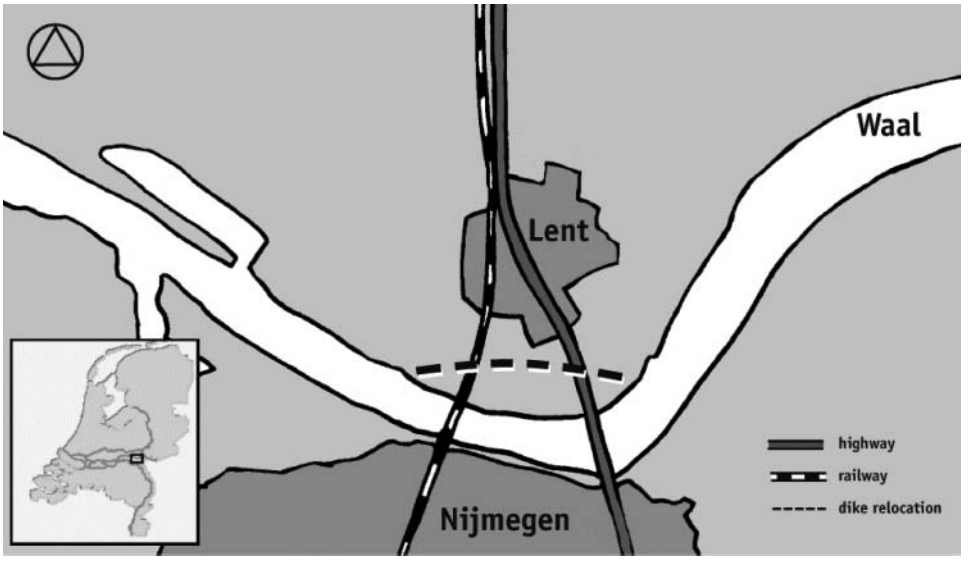

Figure 2. Dyke relocation in Lent, the Netherlands.

Management developed a plan to enlarge the flood plains in nearby Kampen. Both province and municipality, however, were not happy with this plan and asked permission to develop an alternative plan that would also result in improved water safety and spatial quality. The national government decided to give province and municipality the opportunity to devise a new and better plan in two years (2007−2009) which resulted in a plan for constructing a bypass in the river IJssel towards Lake Dronten. The plan consists of ideas for nature development, infrastructure development (road and rail infrastructure), water recreation, and housing near the bypass.

To conclude our introduction of the three cases, we provide an overview of all the stakeholders involved in three cases in Table 2.

3.2. Analysis of the nature of local stakeholder engagement in the three cases

In this section, we systematically analyse the nature of stakeholder engagement in the three cases. We treat subsequently the following aspects: (1) goals of local actors involved in the cases; (2) their resources; (3) the strategies the local stakeholders develop and implement; (4) the responses of governmental actors to these strategies; and (5) the impact of stakeholder initiatives.

3.2.1. Goals of local stakeholders

3.2.1.1. Terps plan in Overdiep Polder. After an information meeting in May 2000 about government plans for water storage in the polder, four farmers invited a provincial delegate and asked him to be given the opportunity to develop their own alternative plan for combining living, agriculture and dairy farming with water storage during peak water periods. Farmers' organization ZLTO and the Province of Noord-Brabant supported the

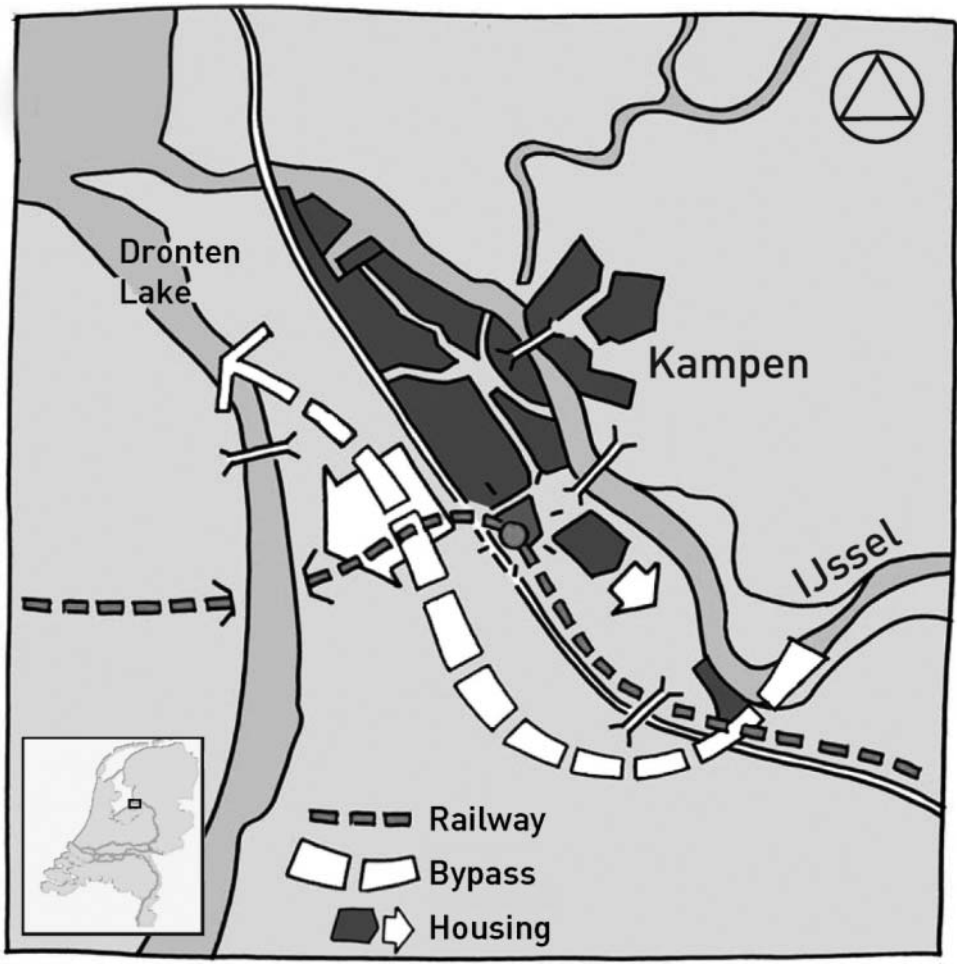

Figure 3. Bypass IJsseldelta South, the Netherlands.

farmers in developing their plan. The inhabitants organized into the Overdiep Farmers' Association, which represented them in their negotiations with governmental actors. As only a proportion of the original inhabitants could stay in the polder, several families would have to move out. Fearing slow procedures, long-lasting uncertainty about the cost-effectiveness of investments and endless delays, most inhabitants shared the wish not to become dependent on externally (government-) developed plans for their polder. As project planning moved on, rifts between the inhabitants (the plausible 'stayers' and 'leavers' became manifest and increasingly influenced both the planning process, the coherence of the Overdiep Farmers' Association, and the relationships between the farmers.

3.2.1.2. Dyke relocation in Lent. In the Dyke relocation in Lent case, diverse citizen groups were involved. In reaction to the governmental plan for dyke relocation, several local groups were formed. These can be divided into (1) 'leavers' (those that have to

Table 2. Which local stakeholders are involved in the projects?

Cases actors	Dyke relocation Lent	Overdiepse Polder	Bypass IJsseldelta Kampen
Citizen groups	Very active; resistance against the breaking down of houses. Various local community groups, individual residents	Inhabitants are mostly farmers. United in one interest group. Very active in 'determining their own future'	Very active; a number of organized groups, local community groups and protest groups
Farmers	Not present in this case	Individual farmers united in the Overdiep Farmers' Association	Present (both individual and organized) in the regional farmer organization
Environmental groups	A few; with focus on cultural heritage, and nature	Not present	Very active; many forms of organized and coordinated action
Others	University of Delft; a professor with ideas for alternatives for the development of the area	Habiforum (knowledge institute) Province of Brabant, Steering Committee Rivers	–

leave their properties for the dyke relocation), (2) 'watchers' (those who get a new dyke in their front yards), and (3) 'stayers' (those who can stay living on the new island). In addition, there were two other local bodies, the village council and an environmental group. The common aim of all these actors was to get the dyke relocation off the table.

3.2.1.3. Bypass IJsseldelta South. In this case, various local stakeholder groups were engaged. First, one can distinguish farmers. While the area to be redeveloped for the bypass mainly influences agricultural land, the farmers want conservation of the agricultural area. As the area is also full of environmental and green resources, several environmental and nature organizations are present in the project. They join hands in organizing protests against plan development by governmental parties ('Bye Bye Bypass'). In addition, a pressure group ('Zwartendijk') was formed, consisting of local citizens, which aims especially at keeping one cultural historical location free from human activity. Finally, there was an association of citizens, which resists the idea of positioning the bypass in the area in such a way that it would split the two communities of Kamperveen and Noordeinde into two.

3.2.2. The resources of the local stakeholders

3.2.2.1. Terps plan in Overdiep Polder. Knowledge was a crucial resource throughout the planning process. Farmers commanded important knowledge about their polder and many other relevant aspects. Other important resources commanded by the inhabitants were their land and related farm property, the initially high social cohesion and community identity, and relatively similar interests in the continuity of dairy farming. Some of the leading farmers were involved and experienced in local politics, and could

easily plug in to provincial political networks. Knowledge institute Habiforum provided expertise to design the terps plan. The two main representatives of the farmers were very skilled in presenting their plan to the outside world, thus creating a growing governmental interest in 'success' of the project.

3.2.2.2. Dyke relocation in Lent. In this case, the local groups developed an alternative to the dyke relocation and invested in lobbying activities towards media, members of the city council of Nijmegen and the national parliament. Three local groups cooperated and formed the Lent Federation (*Lentse Federatie*). Depending on the issue at stake, the other local groups collaborated with the Lent Federation.

Lent Federation had contacts with an emeritus professor of Water Management at Delft University of Technology, who helped the federation in developing its alternative plan. With the help of the city of Nijmegen the citizens' plan was designed as a full alternative in the environmental assessment studies.

3.2.2.3. Bypass IJsseldelta-South. The various stakeholder groups in this case did have very good relations with local and regional media, but also with politicians at various levels. As a result, they managed to get attention in the media. They were also active in sending press releases and presenting themselves on the internet. Furthermore, the various interest groups were able to mobilize their own local networks. Due to strong community ties the interest groups were successful in mobilizing support. Existing relations with politicians were used to strengthen the impact of the stakeholder groups' actions on the planning process.

The interest groups were well equipped to conduct and mobilize counter-expertise, which questioned the expertise as presented by the project initiators.

3.2.3. The strategies of the local stakeholders

3.2.3.1. Terps plan in the Overdiep Polder. As responsible authority for plan development, the province was in charge of the negotiations with the farmers, including general aspects of the plan, like compensation issues. The farmers managed to bring in their alternative ideas. Because there was a strong pressure on the (national and provincial) government to make this showcase project a 'success', the farmers, represented by the Overdiep Farmers' Association, had a relatively strong negotiating position in the planning process. They got help from a professional independent process manager who was also very capable in managing media attention.

However, during the planning process the farmers' group gradually changed into an interest group for 'stayers'. Hence, in the course of the process the 'leavers' did not have a platform representing their interests. Moreover, the farmers' strategy gradually changed. Depending on their personal and household situation, farmers opted for the best possible solution, whether to start a new farming enterprise in the polder, or elsewhere, or to stop farming altogether. As a result, the farmers' community partly fell apart, because farmers left their collaborative strategy and opted for a go-alone strategy.

3.2.3.2. Dyke relocation in Lent. The government plan to relocate the dyke 350 meters inland and to demolish 50 houses caused much resistance among the inhabitants. Their first reaction was to invest positive energy in developing an alternative, rather than negative energy in procedural blocking. They estimated that NIMBY-behaviour would

not be a successful strategy, because the government will win in the end. In 2002, the local group developed an alternative, Lentse Warande, in response to the government plan. The Delft emeritus professor (see above) provided the professional support for their plan. The citizens' alternative would make dyke relocation and the demolition of dwellings superfluous.

The plan was included in the Environmental Impact Assessment (EIA) procedure, as an alternative to the government plan. The local groups got the opportunity to represent citizen interests in the advisory board that was part of the project organization for conducting the EIA studies. Although the advisory board could advise the steering group in decision-making issues, their advice was not binding.

In the participation procedure of the EIA more than 500 written 'viewpoints' were submitted in support of Lentse Warande, but this did not change the government's decision. After the EIA, the project had to follow the national procedure for Room for the River, which includes the possibility for citizens to file complaints and give suggestions. In total, 300 letters have been written. In reaction, the permanent committee for Infrastructure and Water Management in parliament invited representatives of the Lent Federation to hear their thoughts on this issue.

3.2.3.3. Bypass IJsseldelta-South. Local stakeholders became engaged after the internal development and assessment of five alternatives by civil servants of Overijssel Province. The Association Kamperveen's developed a sixth scenario with a blue function (water for recreation) for the bypass, planned closer to the city of Kampen. The province explicitly invited them to come up with their own ideas, and offered assistance by civil servants from the project organization. This co-production led to a plan implying that the location of the bypass was shifted towards the city of Kampen. This new plan fitted well with the ideas of the province to develop a new residential area in the rural area of Kampen. However, farmer organization LTO, the Water Board and environmental organizations had serious doubts about this new development and preferred a 'less blue' bypass, because the blue option hampers conservation of agricultural land and nature.

Since then, especially, the working group Zwartendijk became active. The group Zwartendijk consisted of many highly educated residents who were acknowledged to challenge points of departure and information about demographic developments, growth in the number of citizens, etc. The new location of the bypass now crossed green scenery, which caused resistance from the societal group Zwartendijk. This group developed all kinds of strategies to prevent redeveloping this location for the implementation of the bypass. The group especially resisted the idea of developing a new housing location crossing an area of natural beauty. It started with a petition campaign, signed by about 9,000 inhabitants of Kampen. Moreover, it used the strategy to communicate through local and national television, local newspapers and radio.

3.2.4. Governmental responses

3.2.4.1. Terps plan in Overdiep Polder. Here the farmer initiative combined the national objective of making room for the river with the local interest of strengthening dairy farming. The terps plan will lower the water level during peak discharge in the river Meuse with around 28 cm, which convinced the national government to support the plan. The farmers insisted on getting their plan approved and playing a key role in the process. As a consequence, they were included in the governmental working group, while their

expert became an advisor of the executive board, a novelty in the history of water management. Knowing their key position in the planning process, the farmers shared the ownership of the terps plan with the provincial and national governments, as well as the Water Board that is in charge of implementation. In the Overdiep case, receptivity on the part of the provincial administration was high. However, the key decision-making role on funding remained in the hands of the national government. Sometimes this caused tensions between farmers and province, or between province and national government. These were solved by negotiations, in which the farmers had a relatively strong position (see above).

3.2.4.2. Dyke relocation in Lent. At the beginning of the project, the city of Nijmegen had signed agreements with the municipality and the national government about the preferred option: dyke relocation. In return, Nijmegen was to get compensation for its intended housing plan in the area where the dyke had to be moved inland. Nijmegen also negotiated national funding (90 million Euro) for a bridge across the River Waal in order to solve congestion problems with the existing bridge. While the alderman of Nijmegen supported the government plan, the city council supported the citizens' alternative. This led to a political schism that also influenced the steering group of the EIA organization. The national government presented acceptance of the government dyke relocation plan as a precondition for government funding of the new city bridge. This further diminished the manoeuvring space for the alderman and made the citizens feel they were not part of the decision-making and were not taken seriously.

However, under political pressure, the aldermen of the municipality decided to involve the citizens in the planning process. They were invited to join a group of stakeholders that could provide non-binding advice. This group advised involving the plan Lentse Warande in the EIA. Finally, the municipality agreed, leading to more co-production between the civil servants and citizens in making their plan 'procedurally and substantially fit' for this assessment, not to really integrate the diversity of ambitions and interests of citizens and the municipality.

3.2.4.3. Bypass IJsseldelta-South. As indicated, in a temporary but very productive co-production between citizens and officials a sixth scenario was developed, satisfying the interests of the communities of Kamperveen and Oosteind. Then, in reaction to the relocation plans for the bypass, the Working Group Zwartendijk emerged and joined the sounding board group (a group of stakeholders that could provide reflections and recommendations (advice) to the authorities). However, this group seldom met and played no significant role.

Meanwhile, civil servants that chaired the sounding board in the project group experienced the interaction and communication of actors, mainly of the working group Zwartendijk, as less cooperative. These stakeholders were mobilizing the media to express their arguments and interests. Feeling pressurized by the media and politics to incorporate input and information provided by the working group, the province changed its short-term plans while keeping options open until new information and arguments would come to hand to support the plans for building along the bypass and in the rural area.

3.2.5. Impact

3.2.5.1. Terps plan in the Overdiep Polder. The impact of the citizens' strategies in the terps plan in the Overdiep Polder case can be considered high, as the terps plan was

positively received by most inhabitants of the polder and by the other actors involved, and adopted. It took a couple of years after its introduction before the terps plan was accepted and adopted by the governmental working group. The citizen initiative developed into a process of co-creation in which representatives of the government (local, regional and national) collaborated with local stakeholders, a relationship characterized by periods of cooperation and of conflict. In the end, the terps plan initiated by the inhabitants of the polder became adopted in the governmental implementation strategy.

3.2.5.2. Dyke relocation in Lent. The impact of the citizens' strategies in the Dyke relocation in Lent case can be considered 'procedural impact' as the citizen's plan, the Lentse Warande, was included in the EIA procedure. In this EIA, the Lentse Warande was considered best in its short-term effects. However, the citizens' plan was scoring less positive in long-term climate effects as they were less focused on future climate impacts and considered less the consequences of these impacts for the need for change. For mainly this reason the option of dyke relocation was favoured and the citizens' option was dropped. The citizens fought the outcome even up to the national government, but in the end the dyke relocation option was chosen, after which citizen resistance and engagement extinguished.

3.2.5.3. Bypass IJsseldelta South. The impact of the citizens' strategies in the Bypass IJsseldelta South case can be characterized as temporarily delaying decision-making. Mainly by their diverse set of strategies (media attention, lobbying at local, regional and national government levels, and discussion and participation in the sounding board), the working group Zwartendijk succeeded in reducing the ambition level of the housing plan in the area. In 2011, provincial executives decided to be lenient with the green scenery of Zwartendijk until 2020. However, the formal decision to realize the bypass was taken at the end of 2012. When the authorities started the implementation (in 2015), the working group went to the High Court. The High Court decided that the underpinning of the bypass was insufficient. At the moment, the High Court still has to decide whether the supplementary information is good enough to go forward with realizing the bypass.

4. Discussion

In this section, we compare and discuss the empirical case study results from Section 3. We discuss similarities and differences between the cases regarding the main distinguished variables (goals, resources, strategies, governmental responses and impact), and critically reflect upon their impact. We also position the insights gained in current literature and scholarly debate on stakeholder engagement in flood risk management.

The first insight from comparative case analysis is that, in all three cases, various local stakeholders with different (organizational) backgrounds were engaged in the flood risk management projects discussed, found each other in developing their own goals (parallel to the governmental plans), and managed to mobilize all kind of resources to assist them in the formulation and realization of their goals and initiatives. The organized local groups not only used resources like knowledge and information, but also social networks and collaborations with knowledge organizations and technical experts. The local groups were well-prepared and devoted much time to mobilizing supportive resources to make their plans and initiatives more substantially sound and convince governmental agencies. The media were often used in airing their complaints about the governmental flood risk management plans and getting exposure for their plans. Other scholars also stress this

observation. Thaler and Levin-Keitel (2015) especially stress the local capacity to act, such as knowledge, time, financial, social and cultural capital. This local capital and capacity is needed to ensure that the interests of local stakeholders are represented in flood risk management (see also Kruse and Seidl 2013). This capital and capacity is crucial for realizing impact, as we discuss below.

The second main insight from our comparative analysis is the plurality of strategies used by the different stakeholders in the cases. Other studies also indicate that strong bottom-up community processes are accompanied by strong local leadership and active lobbying to force government authorities to co-operate with (local) stakeholders (Thaler and Levin-Keitel 2015). However, our study also reveals that local stakeholder are not just about resisting governmental plans, but they are also much more about developing alternative plans and initiatives to substantiate their voices and create legitimacy and acceptance of their role in the planning process. It is striking to see that, in all three cases, local stakeholders complemented or combined their defensive strategies with more constructive strategies in which they developed alternative plans that better represented their ideas, interests and values than the governmental plans. Moreover, stakeholders were actively exploiting their networks in order to expose and realize their plans, including informing the media at crucial moments, getting support from governmental bodies, elected officials and politicians (lobbying).

The third insight is that although stakeholder initiatives in the three cases share many similar conditions (like the formal planning procedure as a context, the resistance against the initial public proposal as main driver), they differ considerably in their impact on decision-making about flood risk management plans. In only one case (Overdiep), the impact on decision-making is high because the adopted plan is a farmers' initiative with a central role for the residents in the planning process. In the other two cases the impact is low. In the case of Kampen, the impact amounts to a much smaller building programme and delay in the implementation, but the overall decision for the governmental plan is taken at the end of 2012. In 2015, the stakeholders were successful in mobilizing the High Court against the implementation of the plan, but it is questionable whether this will lead to its definitive liquidation. In the case of Lent, we see that the impact is purely procedural; the stakeholders' plan was incorporated into the formal procedure (EIA), but with no real influence on decision-making.

How can this difference in impact of stakeholder initiatives on decision-making be explained? Two aspects, already touched upon in the beginning of this section, are very important: empowerment and local capacity. These are also recognized by other scholars (Thaler and Levin-Keitel 2015; Kruse and Seidl 2013; Kuhlicke *et al.* 2011) as important assets for local stakeholders, to make sure that governmental bodies cannot ignore their interests and plans and at least have to reconsider their flood risk management strategies. However, as local capacity was found to be present in all three cases, this is a necessary but not a sufficient condition for generating impact. Other conditions have thus to be distilled to explain impact.

We found that timing and co-creation are important conditions for developing stakeholder initiatives with impact. In the case of IJsseldelta South, the municipality had the time (in the initial project phases) to integrate the input of local stakeholders into its plan. However, the revision of the plan led to a relocation of the bypass, causing other stakeholders to become active but at the same time implying less time and space for their voice and input. In the case of the dyke relocation in Lent, local input could be integrated in the EIA studies, although local and national governments agreed on compensation measures which locked decision-making on the governmental plan. The timing of the input

by stakeholders can be considered bad but they could not be blamed for this, because local, regional and national governments had already made deals behind the scenes, which made input from other stakeholders difficult. In the case of the Overdiep Polder, the timing of the initiative was better, as governmental plans had not been developed yet and provincial officials were receptive to inputs from local stakeholders. This barrier of timing is also recognized in other studies of stakeholder and public participation (Chess and Purcell 1999). Stakeholders are often only engaged at the later stages of interventions, and this negatively influences the chances for stakeholders to be involved in decision-making itself (Tseng and Penning-Rowsell 2012, 256): decisions have already been taken and therefore the momentum for having real influence and impact has passed.

Moreover, the nature of the governmental response is important for the chances of impact of stakeholder initiatives. In the case of the Overdiep Polder, a positive response and receptivity to stakeholder initiative was present, evolving into a process of co-creation in which citizens and representatives of lower-level governmental agencies collaboratively worked towards acceptable solutions for flood risk management and spatial planning. This government response was partly present in the case of the bypass in Kampen. The provincial government was initially receptive to community plans, but in a later stage of the process this receptivity and positive response declined as the governmental agency wanted to speed up the process. In the case of the dyke relocation in Lent, we see that a process of co-creation was lacking, as the municipal government did not really have the intention to make the stakeholder initiative a serious 'competitor' for the governmental plan. This factor of institutional susceptibility to bottom-up initiatives is found to be very important for the impact of stakeholder initiatives in developing and implementing flood risk management strategies. In other studies this is discussed in terms of relationships and tensions with existing governmental institutions (Tseng and Penning-Rowsell 2012; Edelenbos, Klok, and Tatenhove 2009). Governments do not always approach stakeholder engagement and initiatives in an open and receptive way, but often feel threatened by them, as they could imply 'hollowing out the state' (Edelenbos 2005). Some authors emphasize the political side: introduction of stakeholder engagement in flood risk management has consequences for existing power relations. Some governmental institutions resist this power sharing (Warner 2006, 2011), which causes barriers to integrating local knowledge into their plans (Tseng and Penning-Rowsell 2012, 257). Especially for the rather closed and expert-oriented Dutch flood risk management domain it is difficult to enlarge its openness to outsider initiatives.

5. Conclusions

This paper has explored the ways in which stakeholders develop alternative flood risk management strategies in the Netherlands. We draw four main conclusions regarding the nature of stakeholder initiatives and the relationship with impact.

First, we can draw the conclusion that in flood risk management, a sector in the Netherlands (but also in other countries) which is heavily dominated by governmental agencies and technical expertise, stakeholder initiatives arise beyond the direct control of government (see also: Lupo Stanghellini 2010). We see that a 'wisdom of the crowds' (Surowiecki 2004) evolves, in which local stakeholders team up with their professional relations (architects, planners, scientists, social community members, etc.) and develop their own plans through a process of self-organization in which they mobilize a wide range of resources and capacities, like media attention, expertise, network relations, finance, etc. (see also Thaler and Priest 2014; Kuhlicke *et al.* 2011; Kruse and Seidl

2013). Local stakeholders show adaptive behaviour in turning their defensive strategies into proactive and productive ones by developing their own alternatives and solutions. This conclusion matches with observations made by other scholars in the field of climate change and flood risk management (cf. Nye, Tapsell, and Twigger-Ross 2011; Thaler and Levin-Keitel 2015). Our study, however, adds some meaningful insights to this emergence of stakeholder initiatives by relating this changing role of local stakeholders to the impact of stakeholder initiatives on decision-making about flood risk management measures.

Second, our study shows that local stakeholders use a mix of strategies and resources (media attention, lobbying, constructing own plans, using their networks, etc.) to organize impact. Our study indicates that the exact mix of these strategies helps to explain the impact of the alternative plans developed by local stakeholders. A combination of positive (generating expertise) and negative lobbying (media attention), as well as anchoring the initiative within the formal planning and flood risk management process, seemed to be quite successful. Self-organized initiatives can gain recognition by pressuring (for example political lobbying and exposure in the media). However, too much negative lobbying or too much emphasis on airing complaints about governmental actions may become a negative asset, as we saw in the IJsseldelta case, as governments can become even more defensive and opposed to bottom-up initiatives than they tend to be. From our study, we can also learn that stakeholder initiatives that are compatible with the public goals are much easier to realize, compared to initiatives which are aimed to oppose the proposed public goals.

Third, another explanation for the impact of stakeholder initiatives is that it is important for the viability and impact of self-organization in flood risk management that it is connected as rapidly and effectively as possible to governmental decision-making. This possible connection depends on how government responds to self-organization in flood risk management. This is also stressed in other literature on participation and self-organization (Edelenbos, van Schie and Gerrits 2010; Margerum 2011; Edelenbos 2005; Feldman and Khademian 2007; Tseng and Penning-Rowsell 2012). However, we can add to this insight that a positive attitude and response from governmental agencies to stakeholder initiatives may contribute to the explanation of the impact of these initiatives. As our comparative analysis shows, the impact of stakeholder initiatives on decision-making increases when governmental agents are more open and responsive to local stakeholder initiatives. This is also influenced by the mix of strategies through which the initiative is launched (see the first conclusion). A positive response followed up by a process of co-creation in which local stakeholders and governmental agencies join hands in further developing the stakeholder plan increases the chance of impact on decision-making, as the stakeholder initiative gets broader attention, elaboration and support. To secure impact it is important to combine stakeholder knowledge with professional and bureaucratic knowledge, with the possibility that this results in co-produced plans for flood risk management. However, this can also lead to a trade-off: the initiative by the stakeholders may disappear in the co-creation with governmental agencies as these agencies and their rules and procedures might become too dominant and take over the initiative (Edelenbos, Klok, and Tatenhove 2009).

Finally, the timing of the stakeholder initiative in the process of flood risk management influences the role and impact of stakeholder initiatives in the three cases. As has been shown above, some substantial promising initiatives came at a bad moment (too late), for example when governmental agencies had already predetermined the preferred measure for flood risk management. Timing and finding the right people in governmental agencies turn out to be crucial factors for generating support for local

stakeholder initiatives in flood risk management. Timing is important as this determines the level of receptivity of governmental actors to local stakeholder initiatives. However, the response also depends on the extent to which the governmental actor really values the input of local stakeholders and is willing to create openings in the decision-making process to incorporate this input.

Flood risk management becomes more and more confronted with stakeholder initiatives (Thaler and Levin-Keitel 2015; Heltberg, Gitay, and Prabhu 2012; Rinaudo and Garin 2005; Petts and Brooks 2006; Sabatier *et al.* 2005). Hence, effective and legitimate flood risk strategies increasingly result from local stakeholder initiatives and the interplay of the strategies of local stakeholders and governmental actors. However, this interplay does not emerge spontaneously, and needs careful timing, negotiation and co-creation (Margerum 2011) facing complexity in planning and flood risk management in a productive way (Innes and Booher 2010). Especially from authorities in the flood risk management domain, a more adaptive and receptive stance towards local stakeholder initiatives seems to be necessary to realize flood risk management measures that are not only effective, but also legitimate by doing justice to local values, priorities and interests.

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